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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 09/996,695 | 11/30/2001 | Otto Z. Zhou | 032566-018 | 1828 |

7590 10/04/2005
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P.O. Box 1404
Alexandria, VA 22313-1404

EXAMINER

MAYEKAR, KISHOR

| | |
|----------|--------------|
| ART UNIT | PAPER NUMBER |
|----------|--------------|

1753

DATE MAILED: 10/04/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/996,695

Applicant(s)

ZHOU ET AL.

Examiner

Kishor Mayekar

Art Unit

1753

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 July 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,9,10,13,14,17,18,21-29,66 and 70-97 is/are pending in the application.
- 4a) Of the above claim(s) 79-97 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,9,10,13,14,17,18,21-29,66 and 70-78 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

1. Newly submitted claims 79-97 are directed to an invention that is independent or distinct from the invention originally claimed for the following reasons: the added claims contains claims to a process of fabricating carbon-nanotubed based electron field emission cathode and claims to a product thereof which are independent or distinct to elected and originally presented claims to a process of depositing a nanostructure-containing material onto a substrate.

Since applicant has received an action on the merits for the originally presented invention, this invention has been constructively elected by original presentation for prosecution on the merits. Accordingly, claims 79-97 are withdrawn from consideration as being directed to a non-elected invention. See 37 CFR 1.142(b) and MPEP § 821.03.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claim 10 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 10, "the pre-formed nanotubes" lacks antecedent basis.

Claim Rejections - 35 USC § 103

4. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

5. Claims 1, 14, 17, 18, 21-25, 27-29, 66, 70, 71, 73 and 74 and new claims 75, 77 and 78 are rejected under 35 U.S.C. 103(a) as being unpatentable over Russ et al. (US 6,342,755), for reasons as of record. To the added limitation of an adhesion promoting in the suspension for the co-deposition with the carbon nanotubes, because Russ discloses the suspension contains particles of metals such as tin, and forms of carbon, and because it has been held that "it is a prima facie obvious to combine two compositions each of which is taught by the prior art to be useful for the same purpose, in order to form a third composition which is to be

used for the very same purpose." *In re Kerkhoven* 205 USPQ 1069; *In re Susi* 169 USPQ 423; *In re Crockett* 126 USPQ 186.

6. Claim 13 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Russ '755 as applied to claims 1, 14, 17, 18, 21-25, 27-29, 66, 70, 71, 73-75, 77 and 78 above, and further in view of Choi et al. (US 6,616,497) or Gal-Or et al. (US 6,258,237), for reasons as of record.

7. Claims 26 and 72 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Russ '755 as applied to claims 1, 14, 17, 18, 21-25, 27-29, 66, 70, 71, 73-75, 77 and 78 above, and further in view of De Jaeger et al. (US 5,296,117), for reasons as of record

8. Claims 9 and 10 stand and new claim 76 are rejected under 35 U.S.C. 103(a) as being unpatentable over Russ '755 as applied to claims 1, 14, 17, 18, 21-25, 27-29, 66, 70, 71, 73-75, 77 and 78 above, and further in view of Colbert et al. (US 6,824,755), for reasons as of record. As to the limitation of shortening by chemical reaction as now presented in new claim 76, since Colbert shows under the

section of "Cutting Single Wall Carbon Nanotubes" in col. 18, line 14 through col. 20, line 20 the cutting of carbon nanotubes by oxidative etching or any method of cutting, the selection of any of known equivalent cutting methods would have been within the level of ordinary skill in the art.

9. Amended claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Russ '755 as applied to claims 1, 14, 17, 18, 21-25, 27-29, 66, 70, 71, 73-75, 77 and 78 above, and further in view of Choi '497. The difference between Russ and the instant claim is the provision of shortening the length of carbon nanotubes prior to their introduction into the suspension. Choi as applied above also shows the above limitation (col. 4, lines 13-17). The subject matter as a whole would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified Russ' teachings as shown by Choi because this would result in preparing the carbon nanotubes prior to their introduction into the suspension.

Conclusion

10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL.**

See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

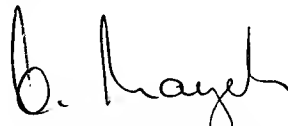
A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kishor Mayekar whose telephone number is (571) 272-1339. The examiner can normally be reached on Monday-Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nam Nguyen can be reached on (571) 272-1342. The fax

phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Kishor Mayekar
Primary Examiner
Art Unit 1753